

# Understanding Metritis in Dairy Cows



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Metabolic and infectious diseases in transition dairy cows directly impact future milk production and reproductive performance. Metritis is an infectious disease that is typically observed 10 to 14 days after calving. Fresh cows with this infection have a foul smelling discharge and may or may not have a fever. Approximately 12% of freshening dairy cows experience some degree of metritis, with the incidence rate being greater in those that experience a difficult birth, have twins, or have a retained placenta. In a webinar, Dr. Stephen LeBlanc from the University of Guelph who studies metritis, discussed the factors that contribute to the occurrence of metritis, the impact of the disease, and treatment for it. A summary of his discussion is included in this article.

- Dr. LeBlanc described metritis as a foul smelling, reddish brown discharge from the vulva. He explained that only 10 to 45% of the cows with metritis have a fever.
- After calving, all dairy cows experience some degree of bacterial contamination within the uterus and a cow's immune system must "kick in" to clear the infection. Healthy cows have a robust and well-regulated immune response that can respond to this contamination. Cows that later develop metritis may have a lower or delayed immune response around the time of calving compared to cows that remain "healthy". Thus, the difference between healthy cows and those which develop metritis is related to how effectively the cow responds to the infection and recovers.
- *E. coli* is the initial bacterial contaminant associated with metritis. Certain strains of *E. coli* are adapted to cause an infection in the uterus, and these are different from those causing mastitis or scours in calves.
- Dr. LeBlanc discussed research that showed cows with metritis have lower milk production and reproductive performance. Mature cows with a mild or severe case of metritis produce about 600 lbs. less milk within a lactation compared to healthy fresh cows. First-calf heifers did not show any difference in milk production whether they had metritis or not. Cows with severe metritis had lower pregnancy rates at first service and by 120 days in milk, but these differences disappeared by 300 days in milk. Culling rates were not different between cows with or without metritis.
- Dr. LeBlanc discussed risk factors for metritis other than dystocia, twins, or retained placenta. Research has indicated a relationship between feed intake before calving and risk for metritis. Cows that later develop metritis had lower dry matter intakes pre-calving than cows that did not develop metritis. Management practices, such as adequate bunk space (36 inches/cow), adequate resting space (80% of capacity), and heat



abatement, are important to optimize feed intake before calving. In addition, subclinical hypocalcemia (milk fever) can be a risk factor for developing metritis. Calcium is important for uterine muscle contractions and for the best immune response to fight off bacterial challenges.

- Dr. LeBlanc also discussed the results of research studies where antibiotics were given as a treatment for metritis. In one study, only three-quarters of the cows treated with an antibiotic were cured 7 to 9 days after treatment. For those cows not treated (saline only), 55 to 62% of the cows were cured. In another study, cure rates by 12 days were approximately 67% of cows treated. These data suggest that more studies are needed to refine and develop better treatment protocols and to determine when cows will likely respond to antibiotic treatment.
- In summarizing treatments for metritis, Dr. LeBlanc suggested that reasonable evidence exists for using systemic and approved antibiotics as directed on the product label when at least 2 diagnostic criteria were present. These criteria include a fever greater than 103°F, fetid discharge, or other symptoms of a systemic infection, such as dullness or being off-feed. As always, treatment options should be discussed with your herd veterinarian and a treatment protocol developed for a particular dairy herd.